Application No.: 09/691,816 Docket No.: PMCTEC 3.0-006

REMARKS/ARGUMENTS

In the final action of October 2, 2002, the Examiner has chided applicant for allegedly not clearly articulating his arguments, and has concluded that this was because of a want of evidence to support them. Applicant admits that his response to the initial official action of May 23, 2002, was rendered somewhat difficult by the fact that the Examiner merely cited two references stating that Tsumura *et al.* "substantially describes the claimed biological waste water treatment invention," and that Schwabegger *et al.* discloses electrolysis treatment so that the combination obviates the invention. Applicant therefore found it necessary to attempt to reconstruct the Examiner's position and determine which specific elements of the cited references disclose feeding waste to a biological reactor, contacting the results thereof with at least one oxidizing agent in a chemical treatment unit, monitoring the oxidation-reduction potential, and returning the conditioned effluent to the biological reactor.

Therefore, although the official action of October 2, 2002, has been made final, applicant respectfully requests that the Examiner consider the above-noted amendments and applicant's arguments which follow, and at least enter this amendment for purposes of appeal. Applicant submits that good cause clearly exists for the entry of this amendment, even beyond that mentioned above. Firstly, since claims 5 and 6 were in dependent form, applicant has submitted new claim 16 to, in the first instance, place claim 5 in independent form, which it is believed the Board of Patent Appeals and Interferences would require should it become necessary to appeal this case. In addition, however, applicant has also amended claim 5 to clarify the fact, as is spelled out throughout the entire specification, that applicant's required contacting at least a portion of the

mixture of biosolids and unconverted organic material from the biological reactor with at least one oxidizing agent which is generated by electrolysis is carried out in a chemical treatment unit, which by its very definition, results in chemical conversion of the unconverted organic materials substantially without any biological conversion of those materials. This "chemical treatment unit" is not intended to be a biological reactor in any sense of the word. Indeed, as can be readily gleaned from the entire specification itself, the chemical treatment units of the present invention must include conditions which chemically break down these unconverted organic materials from the biological reactor, and the mere presence of a broadly defined "oxidizing agent" itself will not permit such chemical reactions to occur. Indeed, both in the biological reactors of the present invention and those of Tsumura *et al.*, air is used in the biological reactor, but not for the purposes of conducting a chemical reaction. In any event, and in an attempt to clarify its position in response to the Examiner, applicant has submited new claim 16 in place of prior claim 5. Applicant thus submits that, since this amendment clearly places these claims in condition for allowance, that fact alone constitutes sufficient good cause for entry of this amendment. In any event, however, in view of the placement of these claims in independent form, and the clarification represented by this amendment, even if for some reason the Examiner still does not believe that this application is in condition for allowance, it is respectfully requested that the Examiner enter this amendment since at the very least it improves the condition of these claims for purposes of appeal.

As is set forth in the official action of May 23, 2002, claims 5 and 6 have been rejected as being obvious over Tsumura *et al.* and Schwabegger *et al.* under 35 U.S.C. § 103(a).

The Examiner contends that Tsumura *et al.* substantially describes the claimed biological waste water treatment invention but does not teach electrolysis of the waste water. Recognizing that Tsumura *et al.* relates to the problem of removing phosphorous from waste water, it is noted that Schwabegger *et al.* is also directed to removing phosphorous from biologically treated waste water, and suggests doing so by subjecting the waste water to electrolysis treatment. The Examiner thus concludes that it would be obvious to have done so in Tsumura *et al.* to further the aims and objectives of that reference. This rejection is respectfully traversed in view of the above amendments and arguments and for the reasons set forth hereinafter.

Turning to the Tsumura *et al.* reference, applicant has previously pointed out that these patentees are concerned with the elimination of nitrogen and phosphorous, which may cause eutrophication. It is clear that throughout the disclosure of Tsumura *et al.*, and in each of the separate reactor units disclosed therein, the patentees are discussing <u>biological digestion</u> in each case. From the outset, this patentee thus discusses its process as a conventional sewage treating process, which generally constitutes a biological process exemplified by the activated sludge process in which it is important to eliminate nitrogen and phosphorous therefrom. Thus, it is specified that in the aeration processes discussed therein, "bacteria are alternately placed under the aerobic and anaerobic conditions to eliminate organic matter, nitrogen and phosphorous." (Col. 1, lns. 29-33.) Continuing throughout the entire specification of Tsumura *et al.*, the <u>only</u> processes discussed which employ aerobic reactions therein are all clearly directed to <u>biological processes</u>. There is no suggestion whatsoever that in any aspect of Tsumura *et al.* "a chemical

treatment unit" such as that specifically set forth in the present specification, and now more clearly defined in the present claims, is utilized. Again, the addition of air into the first and second aeration tanks 2a and 2b of FIG. 11 of Tsumura *et al.* is clearly for the purpose of obtaining aerobic biological digestion, and does not constitute a "chemical treatment unit" in accordance with the present claims. The biological conditions which are utilized for the treatment of organic matter, as well as nitrogen and phosphorous, in these units in no way relate to the chemical reactions which are the subject of applicant's claims. Once again, in applicant's initial biological reactor itself, such as that of bioreactor 20 in FIG. 1, applicant also uses compressed air 22 for the aerobic biological reactions that can occur therein. This corresponds to the reactors of Tsumura *et al.*, but can be vividly contrasted to the chemical reaction unit 40 in FIG. 1 of applicant's invention, as is required by the present claims.

Turning again to the claims, there is nothing in Tsumura *et al.* which would suggest contacting the unconverted organic material from the initial biological reactor, or either of the biological reactors of Tsumura *et al.* for that matter, with an oxidizing agent, much less one generated by electrolysis, in a chemical treatment unit in which the unconverted organic material is chemically converted substantially without any biological digestion of these unconverted organic materials. Indeed, essentially all of the conversion which would occur in a system such as Tsumura *et al.*, in either reactor, is a biological one. Neither the conditions nor the intentions of Tsumura *et al.* relate to chemical conversion therein. This reference simply does not teach or suggest the claimed system of the present invention.

With this in mind, it is believed to now be clear that

invention, and the conditioned effluent then be returned to the biological reactor.

It is therefore respectfully submitted that there is no suggestion to combine these references in the first instance, but that in fact in view of the nature of Tsumura *et al.* there might be a suggestion to substitute that invention for Schwabegger *et al.* but not to combine them. Furthermore, it has now also been clearly shown that, even if this combination were made, it certainly would not then suggest the presently claimed method in which a chemical treatment unit is used in which the oxidizing agent comprising the result of electrolysis is used for the specific purpose and in the specific manner set forth in the present claims.

It is therefore respectfully submitted that the claims now set forth in this application clearly possess the requisite novelty, utility and unobviousness to warrant their immediate allowance, and such action is therefore respectfully solicited. It is nevertheless also requested, even if the Examiner does not agree that this is the case, that these amendments nevertheless be entered at least for the purposes of appeal herein. In any event, however, if the Examiner does not agree that these amendments render these claims allowable over the art, it is also respectfully requested that he telephone applicant's attorney at 908-654-5000 in order to attempt to resolve any remaining issues in this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

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If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 12-1095 therefor.

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Respectfully submitted,

By _____

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Version With Markings to Show Changes Made

IN THE CLAIMS

6. (AMENDED) The process of claim ~~5~~ 16 wherein ~~at~~ said oxidizing agent generated by electrolysis is generated by subjecting at least a portion of said at least a portion of said mixture of biosolids and unconverted organic material to electrolysis.

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